W. P. CAREY
SCHOOL of BUSINESS

An Introduction to Quality Assurance Throughout the IT Organization

W. P. CAREY
SCHOOL of BUSINESS

W. P. CAREY
SCHOOL OF BUSINESS

Harvey Shrednick

- Partnership Development Coordinator

  CABIT, W.P. Carey School of Business @ ASU

- Previous Practitioner Experience
  - ***CIO, Corning***
  - ***Sr. Director IS, Nabisco***
  - ***Director IS, Clairol***

ASU ARIZONA STATE UNIVERSITY

W. P. CAREY
SCHOOL OF BUSINESS

Raghu Santanam

- Associate Professor; Director of Research, CABIT
- Research and teaching interests
  - Business process modeling and applications of IT
  - Business Process and IT standards
  - Autonomic and Grid Computing

ASU ARIZONA STATE UNIVERSITY

W. P. CAREY
SCHOOL OF BUSINESS

Julie Smith David

- Associate Professor
- Research and teaching interests
  - Enterprise systems
    - The market
    - Selection
    - Success factors
    - Value
  - Agile organizations
  - Systems integration

ASU ARIZONA STATE UNIVERSITY

W. P. CAREY
SCHOOL OF BUSINESS

Agenda

- Quality Assurance
  - Enabling the quest for customer delight
  - Contrasting different organizational approaches
- Business Process perspective
- High quality operations and Agile applications environment

ASU ARIZONA STATE UNIVERSITY

W. P. CAREY
SCHOOL of BUSINESS

Quality Assurance

Enabling the Quest for Customer Delight

W. P. CAREY
SCHOOL of BUSINESS

W. P. CAREY
SCHOOL OF BUSINESS

A Tale of two order fulfillment system implementations

ASU ARIZONA STATE UNIVERSITY

W. P. CAREY
SCHOOL OF BUSINESS

Tale One

- Corning Consumer Housewares
- Manufacturer/Distributor
  - Glass/Metal/Plastic Kitchen Products
- $500 Million Annual Sales
- Major Customers: Wal-Mart & K-Mart
- Customers are mass merchandisers, department stores, specialty outlets
- Multiple factories/Single distribution center
- Mature business – Innovation by product extensions
- 3000 Employees

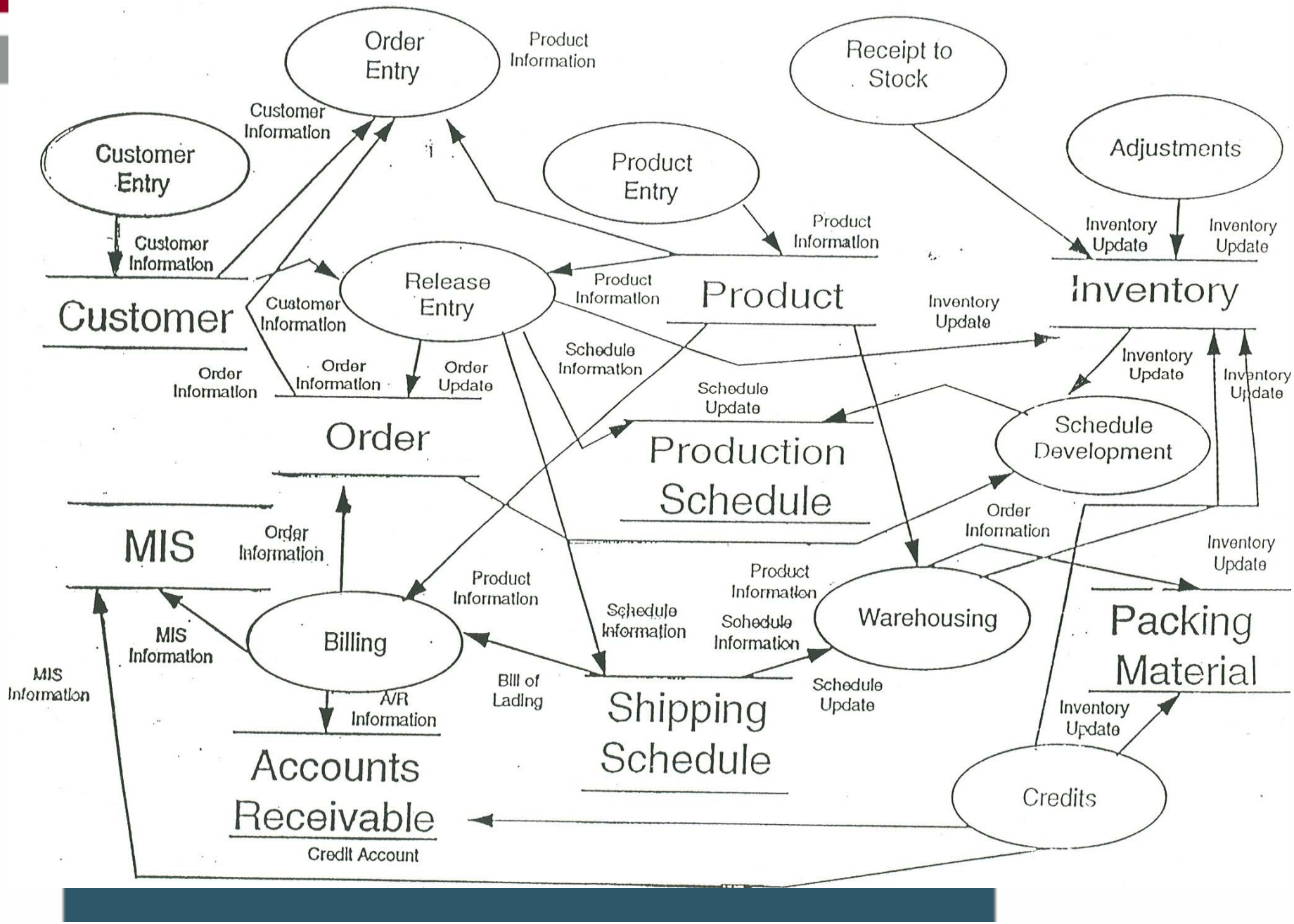
ASU ARIZONA STATE UNIVERSITY

W. P. CAREY
SCHOOL OF BUSINESS

Tale Two

- Corning Video
- Manufacturer of television glass
- $350 Million Annual sales
- Major customers
  - Zenith, Sony, Panasonic, Toshiba
- Customers are tube makers selling to TV set makers
- Single factory
- Mature Business – Innovation by product extensions
- 1200 Employees

Order Fulfillment Information Flow "Before"



W. P. CAREY
SCHOOL OF BUSINESS

Tale One – Housewares

A disaster story

- Unsuccessful implementation, after 2 year effort
- Write-off software
- Unhappy customers

ASU ARIZONA STATE UNIVERSITY

W. P. CAREY
SCHOOL OF BUSINESS

Tale 2 – Video

A Positive Experience

- Successful implementation, after 1 year effort
- Contributed $ to the bottom line
- Delighted customers

W. P. CAREY
SCHOOL OF BUSINESS

CEO Decree

- Tale 1 – Housewares

  (After the project fails) We'll investigate the mess and punish those responsible for this debacle.

- Tale 2 – Video

  (Before the project starts)

  We'll shoot the stragglers but we'll carry the wounded.

ARIZONA STATE UNIVERSITY

Contrast the Different Approaches

	Tale 1 – Housewares	Tale 2 - Video
Leadership	IT	CEO
Project Management	Informal	Formal Stage-gate focus
Total Quality Orientation	Superficial	Committed
Process Redesign	Maintain "unique" character of original process	Map to software functionality
Software Selection	Heavy customization of basic package	Accept functionality of basic package
Software Development	No provisions for pilot testing	Conference room pilot
Customer Involvement	Limited participation	Customers driving change from the start
Outcome	Back to the drawing board	Recognition of customer service as world-class Center of excellence

W. P. CAREY
SCHOOL OF BUSINESS

Business Processes and Information Technology

ASU ARIZONA STATE UNIVERSITY

W. P. CAREY
SCHOOL OF BUSINESS

Enabling Business Processes through IT

- Companies spend on an average 2.5% of revenues on IT
  - Approximately $250 billion per year
- Over 50% of IT initiatives are abandoned
- Over 40% are delivered late and over budget
- 70% failure rates in Process change efforts
- Tangible financial impact only 37% of cases when projects completed
- Only 25% of CEOs satisfied with IT investments

A process…

- Is outcome oriented
  - Product development, order fulfillment
- Is for a customer and has stakeholders
- Has a trigger event
- Is a collection of interrelated tasks
- Is not a function
  - ***Functions are vertical…processes are horizontal***

How to make process orientation work

- ***Integrated processes and vertical organizations cause confusion***
  - Management by region, product and function causes conflicts
- ***Organizational chart is a reporting structure***
  - Yet is often the only model that managers understand

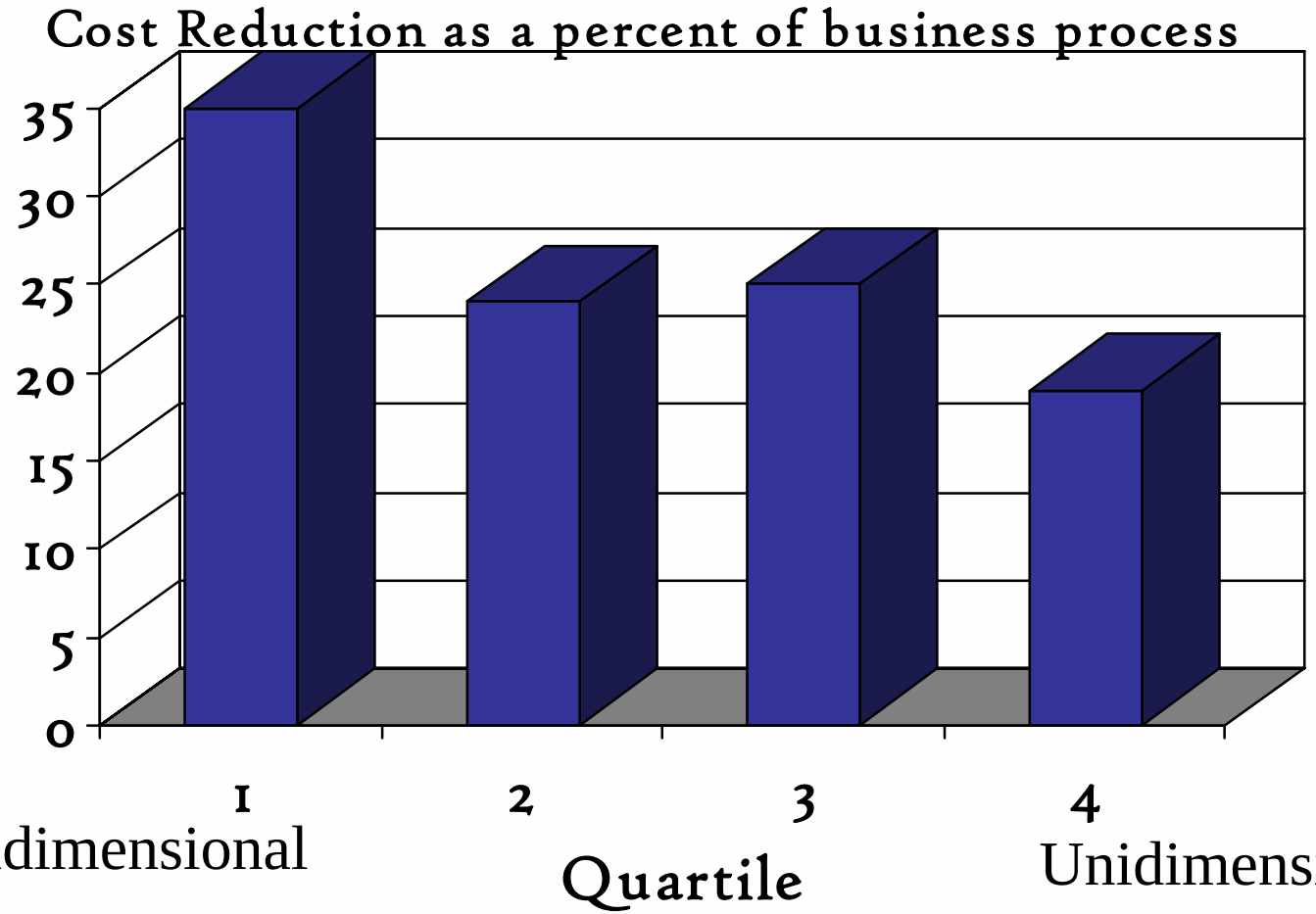
What process design entails

- Understanding business environment and goals
- Questioning explicit and implicit rules and assumptions
  - Credit decisions are made in credit dept.
  - All purchase orders must be routed through purchase dept.
  - Expense reports must attach receipts for all items

A synthesis of ideas

- Industrial engineering and Taylor
- Porter's value chain concept
- Continuous Improvement and quality movement
- Cellular manufacturing
- Retro-fitting successful IT projects
  - Ford (Accounts Payable process); IBM (Credit Process); Mutual Benefit Life (Policy Issue Process)

W. P. CAREY
SCHOOL OF BUSINESS

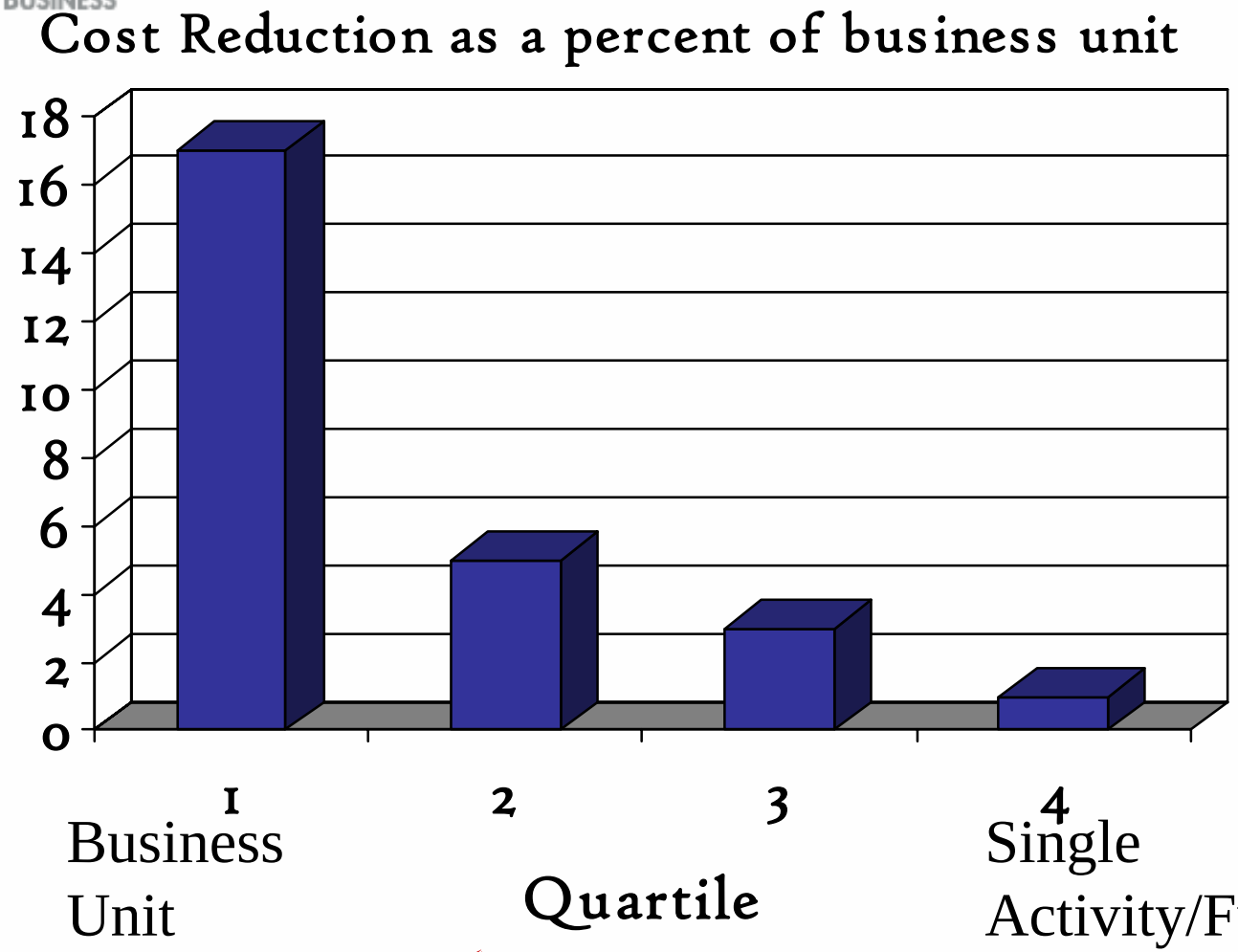


DEPTH REDUCES SPECIFIC PROCESS COSTS

(Source: Hall, Rosenthal, Wade, HBR, 1993).

ASU ARIZONA STATE UNIVERSITY

W. P. CAREY
SCHOOL OF BUSINESS



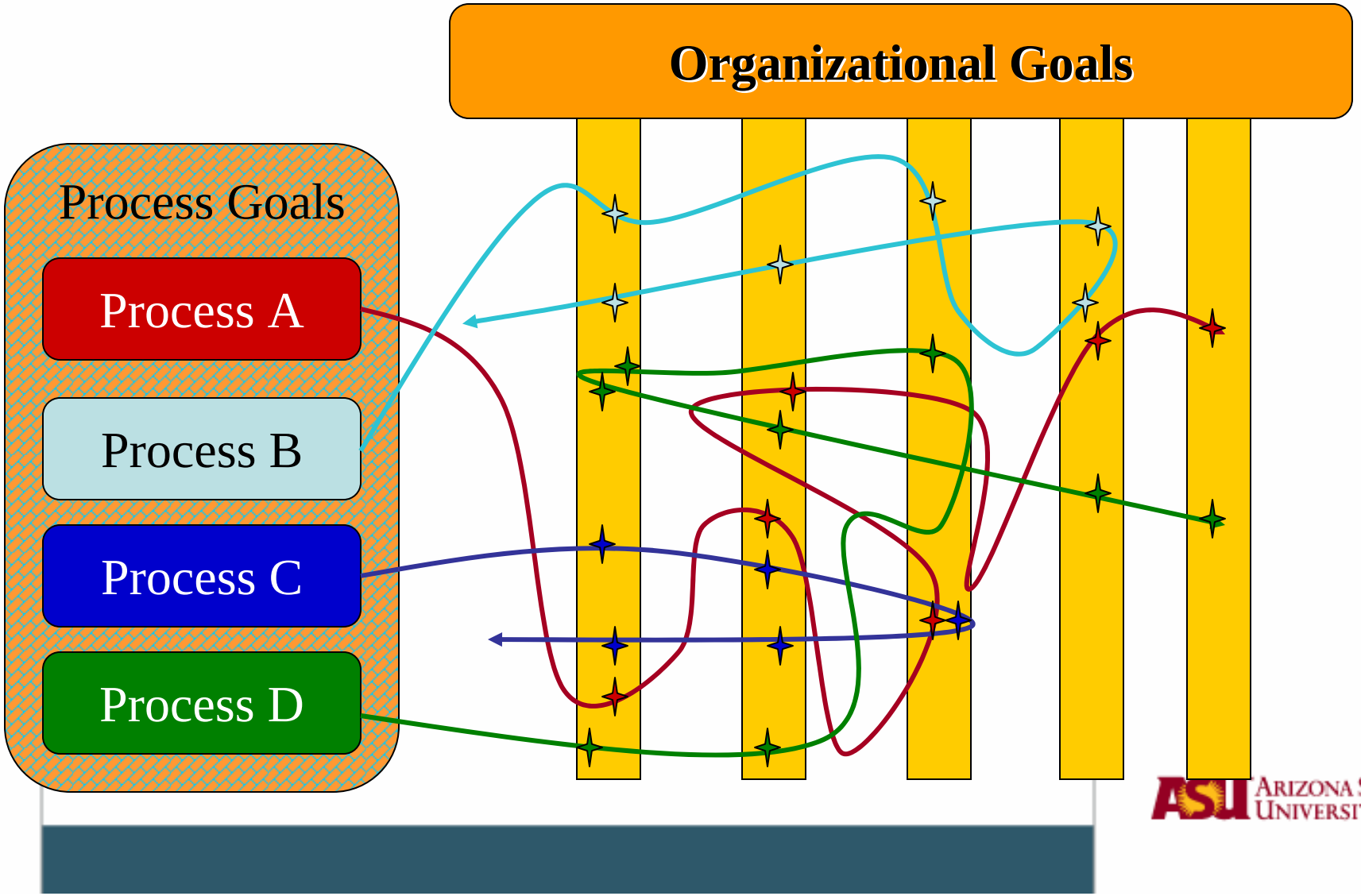
BREADTH REDUCES OVERALL BUSINESS UNIT COSTS

(Source: Hall, Rosenthal, Wade, HBR, 1993).

ASU ARIZONA STATE UNIVERSITY

W. P. CAREY
SCHOOL OF BUSINESS

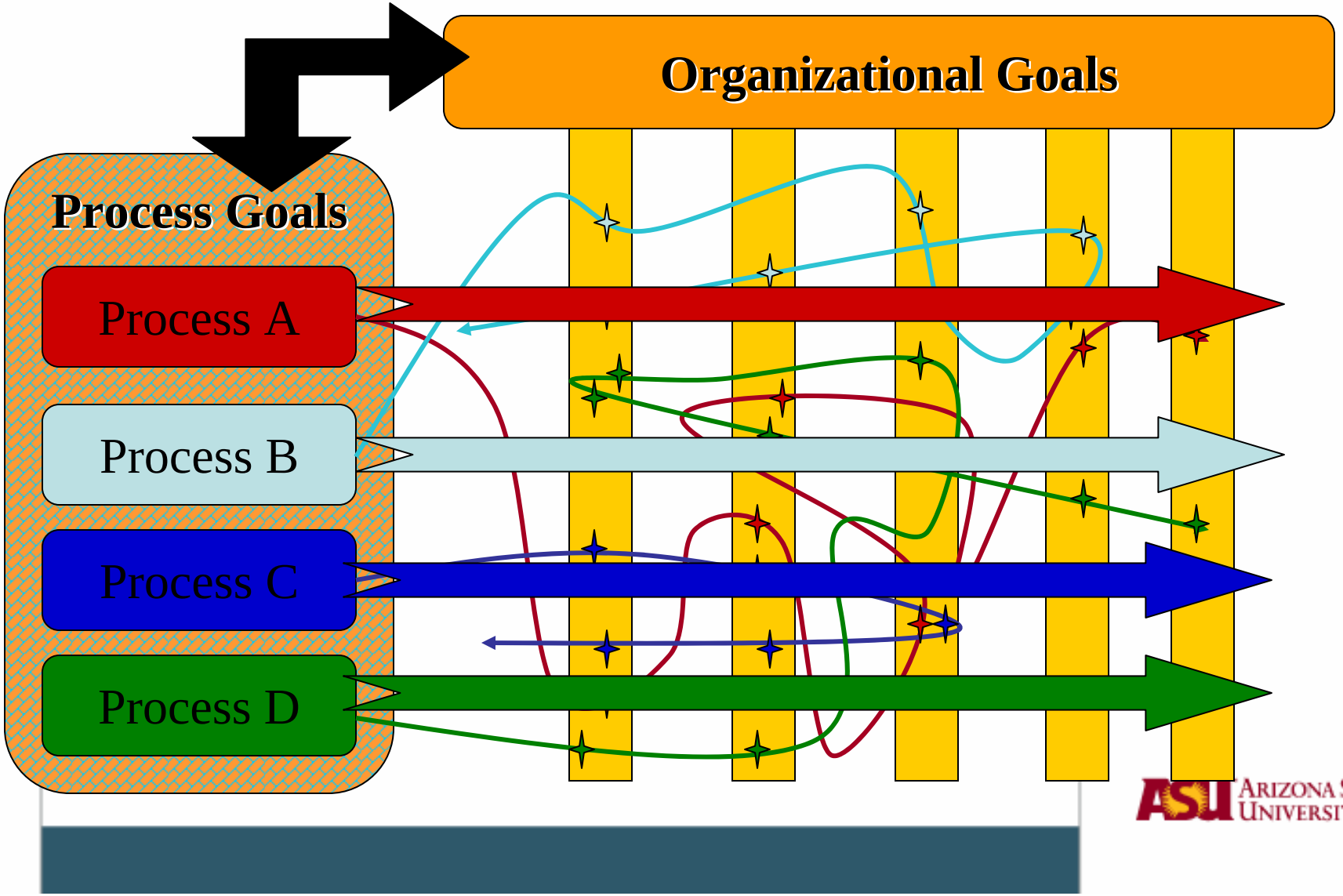
Goal articulation is key



ASU ARIZONA STATE UNIVERSITY

W. P. CAREY
SCHOOL OF BUSINESS

Goal articulation is key



ASU ARIZONA STATE UNIVERSITY

Making it work

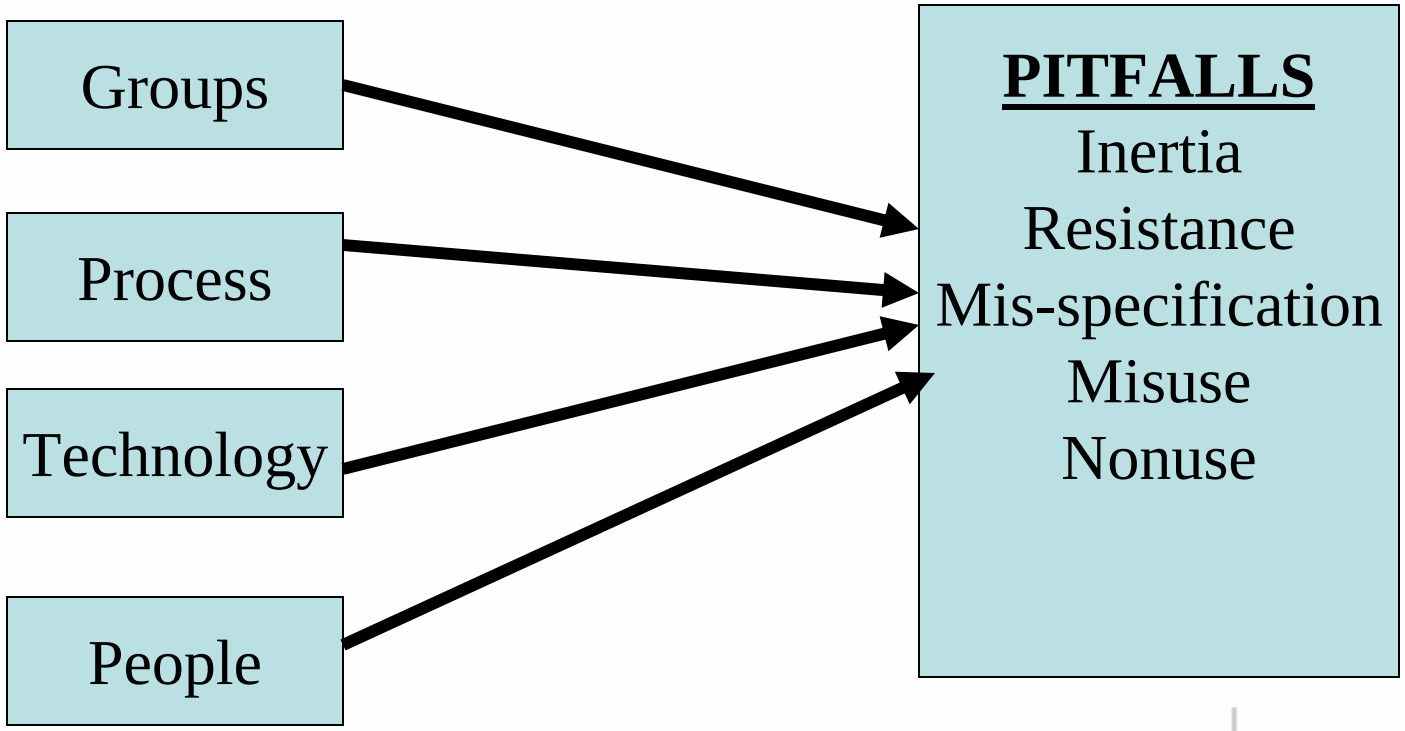
- Process owners manage and ensure intersection of process and functional unit goals
- Budgets by process
  - Process budgets aggregate to functional unit budgets
- Process owners are NOT project managers

Process goals

- Most managers understand departmental goals…not process goals
- Process goals
  - Organizational goals, customer and stakeholder requirements, benchmarks
  - Decompose goals at multiple levels (2 or 3)
- Relate functional goals to process goals
- ***Process owners focus on the interfaces in the organizational chart w.r.t the process flow***

W. P. CAREY
SCHOOL OF BUSINESS

Pitfalls and Factors of Process Change



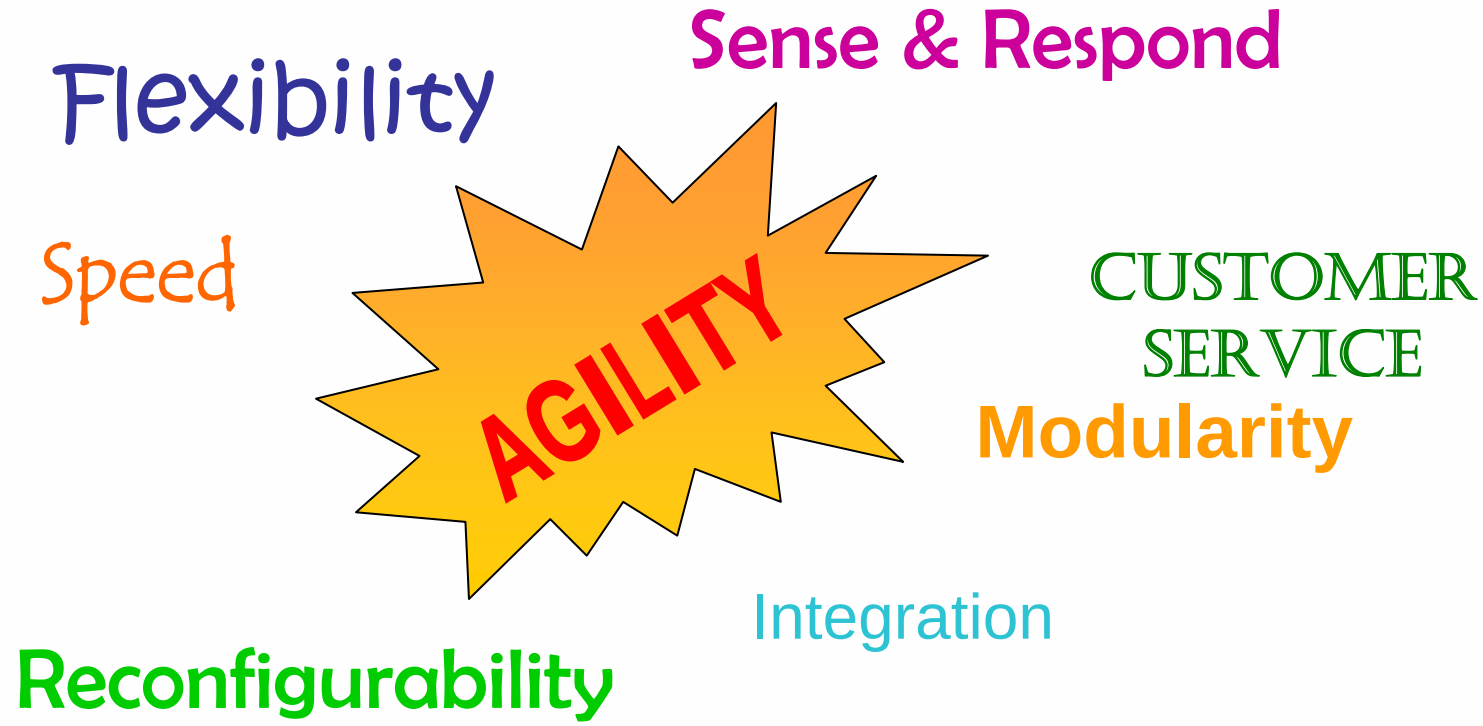
W. P. CAREY
SCHOOL OF BUSINESS

High quality operations and Agile applications environment

ASU ARIZONA STATE UNIVERSITY

W. P. CAREY
SCHOOL OF BUSINESS

Pressures you face?



What does this environment require?

- Requirements
  - Process driven
  - Functional and technical
  - Communication
    - People
    - Systems
  - Applications
  - Data
  - Many, many more!

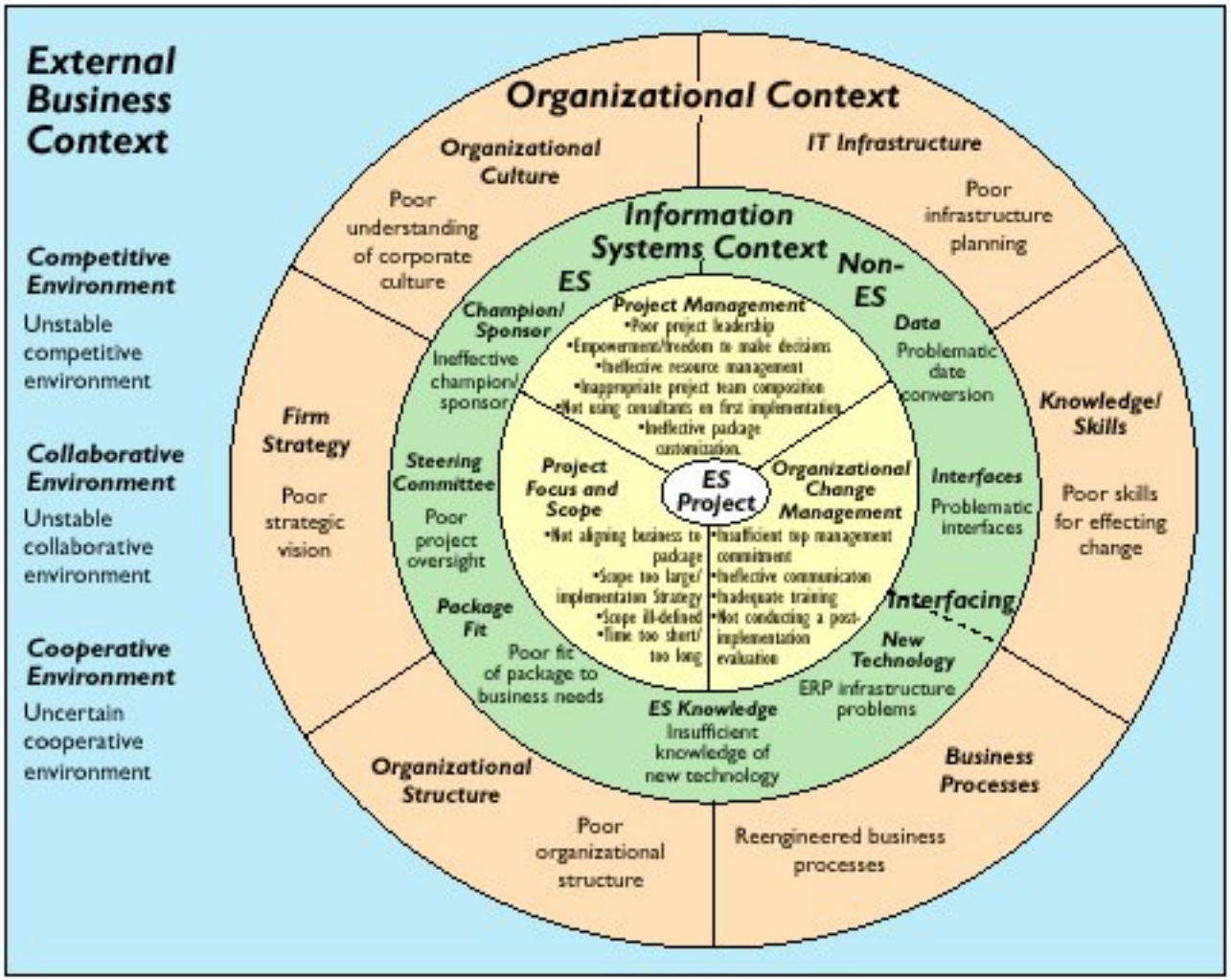
W. P. CAREY
SCHOOL OF BUSINESS

Solution One: Enterprise Systems

- Designed to incorporate "best practices"
- Designed to be ***configured*** to meet your process needs
- Incorporate many more functions than you'll actually use
- Lacking standards for integration

W. P. CAREY
SCHOOL OF BUSINESS

Enterprise Systems Risks

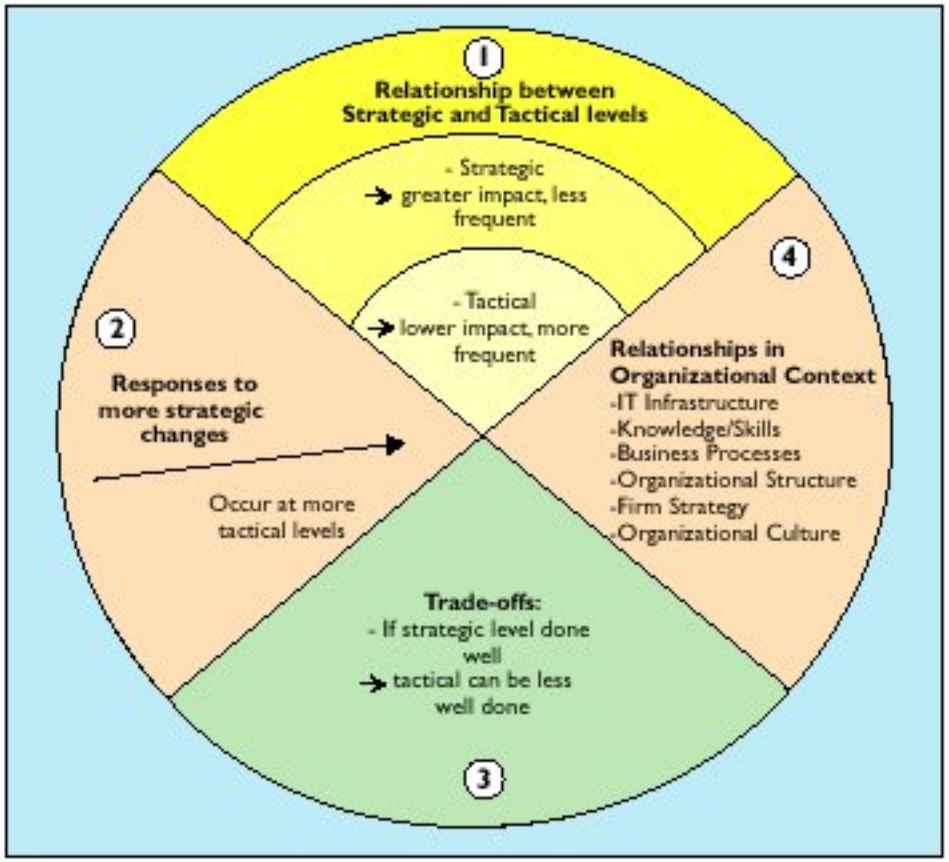


Source: Scott, J.E. and I. Vessey (2002) Managing Risks in Enterprise Systems Implementations *Communications of the ACM* (45:4): 74-81.

ASU ARIZONA STATE UNIVERSITY

W. P. CAREY
SCHOOL OF BUSINESS

Relationships between risks



Source: Scott, J.E. and I. Vessey (2002) Managing Risks in Enterprise Systems Implementations *Communications of the ACM* (45:4): 74-81.

ASU Arizona State University

W. P. CAREY
SCHOOL OF BUSINESS

QA to Minimize Risks

- Selection process
  - User requirements
    - Expectation Management
  - Sources of strength
  - Vendor management
    - Demo
  - Change management capabilities

ASU ARIZONA STATE UNIVERSITY

W. P. CAREY
SCHOOL OF BUSINESS

QA issues during implementation

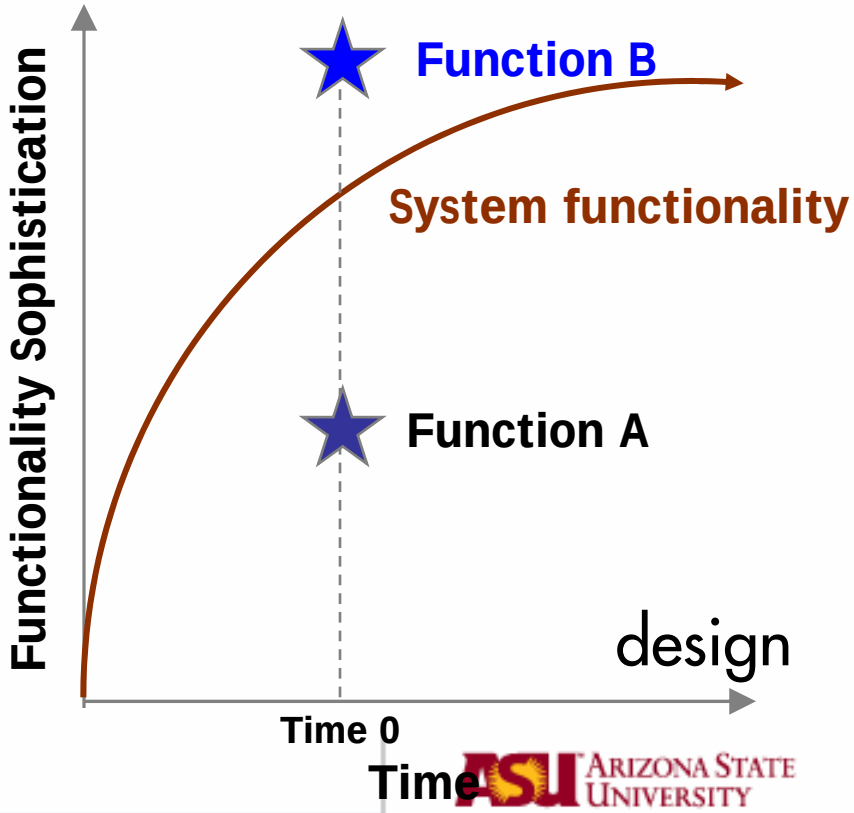
- Top management support
- Data conversion
- Process configuration
- Change management
  - Communication!
- Documentation
- Integrated test plans – and analysis!
- Training
- Configure or customize?

ASU ARIZONA STATE UNIVERSITY

W. P. CAREY
SCHOOL OF BUSINESS

Customize vs Configure

- Do you touch the program code or install "vanilla"?
- Issues
  - Relative efficiency
  - Costs
    - Development
    - Support
    - Upgrades
    - Warranty
  - Incentives
  - Effect on system decisions



ASU ARIZONA STATE UNIVERSITY

Solution Two: Integrated applications

- Internal: best of breed
- External: B2B communication
- Issues
  - Standards?
  - Documentation?
  - Data quality?
  - Technical compatibility?
  - Modularity of applications?
  - Power bases?
  - More!!!

W. P. CAREY
SCHOOL OF BUSINESS

QA for integrated environments

- Data quality initiatives
- Require tool to integrate components
  - Process-oriented (rather than point-to-point)
  - Graphical representations
  - Standards and API capabilities

ASU ARIZONA STATE UNIVERSITY


Agile Application Environment
Integrate Solutions
User Requirements
Implement Solution
Select Solution
High Quality Operations